

**Informational Briefing for RA  
Status of UIC Permits and Aquifer Exemption  
for Powertech's Dewey-Burdock Project  
March 12, 2020**

**Purpose**

Provide an overview/update on the status of the Underground Injection Control (UIC) Area Permits, proposed Aquifer Exemption and accompanying documents and public participation (including tribal consultation) activities related to Powertech (USA) Inc.'s (also known as Azarga's) proposed Dewey-Burdock Uranium In-situ Recovery (ISR) project in South Dakota. Provide information about upcoming well casing variance and communication with the Nuclear Regulatory Commission and Azarga.

**Background and Status**

The proposed ISR project uses a series of injection wells which require permitting under the UIC Class III regulations to inject a solution (native groundwater with oxygen and carbon dioxide added) into the ore body to extract the uranium. The uranium-bearing solution is then extracted through recovery wells and pumped to a processing plant where the uranium is removed. The barren solution is pumped back to the injection wells and reused. Process waste fluids must be treated to remove radium and disposed of into deep injection wells which require permitting under the UIC Class V regulations. South Dakota has not assumed authority to implement the UIC Class III or Class V programs, so Region 8 remains the permitting authority.

Powertech applied to the EPA for UIC Class III and Class V area permits and an aquifer exemption in 2008 and 2010 (complete applications were submitted in 2012 and 2013). EPA issued draft Class III and V area permits and proposed aquifer exemption approval on March 6, 2017 and requested public comment until June 19, 2017. Public hearings were held in four locations over five days. Over a thousand pages of comments and over 7,000 mass emails were received. EPA addressed a number of the comments, including many from Powertech, and re-issued draft permits and proposed aquifer exemption on August 26, 2019, with the comment period closing December 11, 2019. EPA is now working to finalize the permits by August 2020 (see **Next Steps** below). Powertech has raised concerns over the length of time it has taken EPA to act on these permit applications and have held numerous calls with the Water Division Director, Regional Administrator, and EPA Headquarters.

The Dewey-Burdock site is in southwest South Dakota in the southern Black Hills region, 13 miles northwest of Edgemont, SD and 45 miles west of the western border of the Pine Ridge Reservation (**Figure 1**). The Black Hills is a sacred area for at least 38 tribal nations, a number of which claim treaty rights to this region. Several other state and federal agencies have roles in permitting or reviewing the project overall:

- **SD DENR Actions:** Large Scale Mine Permit, Groundwater Discharge Permit, and Water Rights Permits for two aquifers were proposed in late 2012/early 2013. Hearings before the State Water and Mining Boards were under way until November 2013 when the State Boards suspended further state agency actions until the completion of NRC and EPA actions which include demonstration of adequate financial assurance from Powertech.

- **Nuclear Regulatory Commission (NRC) Actions:**

- The NRC has the authority to license the milling, processing, and transport of uranium from mining facilities including Powertech's proposed ISR operations. As part of the licensing process, the NRC must comply with NEPA and other federal laws including the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). Although the UIC permitting program is not subject to NEPA, EPA has used NRC's NHPA and ESA findings to help inform its compliance with both statutes (see below).
- In 2014 the NRC issued its final license, Final Supplemental Environmental Impact Statement and NHPA Programmatic Agreement (PA). Since then the Oglala Sioux Tribe (OST) and Powertech have raised contentions before the Atomic Safety and Licensing Board (ASLB) and the D.C. Circuit Court. Most recently, NRC staff concluded that on the issue of identification of traditional cultural properties, it would not be able to resolve its differences with the OST on what constitutes an adequate tribal survey of cultural sites in the proposed project area.
- The ASLB held an evidentiary hearing to address this impasse on August 28-30, 2019. The ASLB issued an Order on December 12, 2019 finding in favor of the NRC staff that the remaining contention is resolved even though a tribal cultural survey was not conducted. Both the Oglala Sioux Tribe and the Consolidated Intervenor filed petitions for review to the Commission. The Commission has not responded as to whether it will grant the petitions for review of the ASLB decision.
- In the D.C. Circuit, the case was not decided on the merits of any substantive issues. The court specifically concluded that the NRC decision-making process was not complete and declined to consider the merits of any substantive issues. This means that the OST will have an opportunity to appeal once the NRC process is complete. The D.C. Circuit held that the NRC did not comply with NEPA and that they should not have issued the license with the deficiencies, however they thought it would be too disruptive to vacate the license at that point in time. At that point, it went back to the NRC to complete its administrative process.
- The NRC process won't be complete until the full commission rules. At that point, the Tribe can appeal the substantive issues to the D.C. Circuit.
- The NRC has communicated several concerns about Class III Area Permit requirements related to monitoring and geochemical modeling inside the Aquifer Exemption boundary, questioning the EPA's authority under the Safe Drinking Water Act to include these requirements in the permit. We are seeking input on how to engage the NRC for further discussion (See **Item 6** below).

**Other EPA Actions**

- Superfund Preliminary Assessment of Darrow-Freezeout-Triangle Abandoned Mines – This assessment was done in response to a 2012 citizen's petition expressing concerns that releases from these abandoned mines are impacting land and water including areas within the adjacent Dewey Burdock proposed project area. Sampling did not indicate that a contamination release from the mines had occurred; therefore, the EPA decided that no further action was needed.
- EPA's NEPA program reviewed and commented on the NRC's Draft Supplementary EIS in 2013 and the Final in 2014.

**Other EPA Offices:** Region 8's UIC program worked with the following offices in developing the initial draft permits and aquifer exemption for comment in March 2017: Office of Water, Office of General Counsel, Office of Radiation and Indoor Air, Office of Enforcement and Compliance Assurance, Office of International and Tribal Affairs, and Office of Federal Activities.

### EPA Region 8 UIC Actions

In addition to items 1-6 below, see **Attachment 1** for additional aspects of this project not being discussed today.

#### **1. Class III Area Permit**

- Permit Summary: Powertech proposed up to 14 wellfields and 2,330 injection/production wells (**Figure 2**).
- General Permit Requirements: The permit requires rigorous wellfield characterization to ensure adequate upper and lower confining zones for vertical and horizontal confinement of injected fluids. These characterizations will be part of a Data Package Powertech submits to EPA for each

## **Ex. 5 Deliberative Process (DP)**

- Permit requirements are needed to protect USDWs outside the exempted area during and after ISR operations that are based on site-specific data. Regional Applied Research Effort work with the US Geologic Survey and the EPA Office of Research and Development indicated potential for groundwater restoration concentrations of ISR contaminants to increase after the stability monitoring period specified in the NRC License and be transported toward the aquifer exemption boundary. The geochemical modeling and targeted monitoring requirements in the Class III permits evaluate potential impacts to USDWs from these effects.
- The Class III final Area Permit also contains excursion monitoring and operational monitoring required in the NRC License, even though both Powertech and the NRC requested to have them removed. These requirements are necessary to protect USDWs and to meet UIC regulations.

## **Ex. 5 Deliberative Process (DP)**

- Powertech must provide financial assurance covering the first ISR wellfield for EPA review and approval before we issue the final Permit.

#### **2. Class III Aquifer Exemption (AE)**

- Sampling of the uranium-bearing aquifers within the proposed injection zones show that these meet the definition of a USDW. Accordingly, Powertech requested an exemption of these aquifers to enable ISR operations.
- EPA's aquifer exemption Record of Decision (ROD) proposes approval based on finding that the uranium ore-bearing portions of the Inyan Kara aquifer do not currently serve as a source of drinking water and will not serve as a future source of drinking water because the uranium can be recovered in commercially-producible quantities.

## **Ex. 5 Deliberative Process (DP)**

**3. Class V Deep Well Area Permit**

- The Class V Area Permit requires Class I well construction standards, which are the most protective under the UIC regulations for deep well disposal of treated ISR-related fluid wastes and consistent with state-issued UIC permits in Wyoming.
- The Class V Area Permit requires treatment of the injectate to meet radioactive and hazardous waste standards before injection into an aquifer located above a regionally important USDW (**Figure 3**).
- The Class V final Area permit initially will authorize only one Class V well per Powertech's request, with the option to add up to three more wells in the future (**Figure 2**).
- Powertech must provide financial assurance covering this well for EPA review and approval before we issue the final Permit.

**4. National Historic Preservation Act (NHPA) Section 106 Compliance**

- **Ex. 5 Attorney Client (AC)**
- The southern Black Hills region contains sites of potential cultural and historic significance to many federally recognized tribes.
- EPA activities to date have included sending invitation letters for NHPA consultation to 38 tribes in Regions 5, 6, 7 and 8, which resulted in some tribes requesting "inform and educate" sessions with Tribal Historic Preservation Officers and Environmental Directors.
- **Ex. 5 Attorney Client (AC)**
- We received comments that the EPA should not rely on the NRC's work and programmatic agreement, and that we should wait until the NRC process has been litigated before issuing final permits

**Ex. 5 Deliberative Process (DP)**

**5. Well Casing Variance for RA Approval**

- 40 CFR § 147.2104 includes well construction requirements for UIC wells in South Dakota. Powertech requested approval of a variance from 40 CFR §147.2104(b)(1), that states that the owner or operator of a new injection well cased with plastic (PVC, ABS, or others) casings shall not construct a well deeper than 500 feet.
- The regulation at 40 CFR 147.2104(d)(4) allows the RA to approve alternate well casing and cementing if the owner/operator demonstrates that it will adequately protect USDWs.

- Documentation of this approval will be a Record of Decision detailing the reasons for the decision, to be signed by the RA.
- Supporting documentation will include Powertech's demonstration included in the Class III permit application.

**Ex. 5 AC/AWP/DP**

# Ex. 5 AC/DP

## Next Steps

- We plan to issue final UIC permits and aquifer exemption by August 24, 2020
- The timing of our final permit and aquifer exemption decisions is based primarily on the number and nature of comments and the technical complexity of the responses required. The extensive administrative record is also critical due to the high litigation risk and requires time to organize.

## Ex. 5 Deliberative Process (DP)

- Azarga has concerns about this timeline and may contact the RA to discuss these concerns.

**Attachment 1**

**Additional Aspects of the Dewey Burdock Project**

**1. Cumulative Effects Analysis (CEA)**

- A CEA document was prepared per UIC regulation § 144.33 *Area permits (c)*, which states the area permit may authorize the permittee to construct and operate...wells within the permit area provided: “(3) The cumulative effects of drilling and operation of additional injection wells are considered by the Director during evaluation of the area permit application and are acceptable to the Director.”
- The CEA relies heavily on mitigation measures in the South Dakota large scale mine permit and the future NPDES stormwater permit to be issued by the State. **Ex. 5 Deliberative Process (DP)**
- **Ex. 5 Deliberative Process (DP)**
- We received public comments stating that the EPA should expand the CEA to be equivalent to a full NEPA review. We do not plan to expand the scope of the CEA and will address these comments in the Response to Comment document.

**2. Tribal Consultation**

- EPA sent letters to the tribal nations we consulted with previously informing them of deadlines for contacting us to schedule consultation and hold consultation meetings. We have received a response from the Oglala Sioux Tribe and have scheduled a consultation meeting with OST Council on March 23, 2020. Standing Rock and Santee Sioux tribes have also requested consultation.
- We will prepare responses to the 10 tribes we have consulted with by the time the final permits are issued.

**3. Endangered Species Act (ESA) Compliance**

- In May 2019 EPA completed a Biological Assessment (BA) of potential effects on endangered species and their critical habitat arising from its UIC permit actions. EPA found that its actions may affect, but are not likely to adversely affect, three listed species.
- EPA submitted its BA to the USF&WS and received written concurrence from them in June 2019. EPA will include various measures in its final permits to avoid, minimize, or mitigate these potential effects.
- Powertech provided comments on the mitigation measures proposed in the second draft permits to fulfill our ESA obligations that may result in modification of the mitigation measures.

**4. Environmental Justice Analysis**

- We received comments that the scope of the EJ analysis should be expanded to include additional topics and to expand our discussion of Treaty Rights and impacts from historic mining.

**Attachment 2**

**Ex. 5 AC/DP**



# Ex. 5 AC/DP